BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.
Follow the sample format on preceding page for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Adam Lerner	Associate Professor of Medicine

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Amherst College	A.B.	1979	Biology
Yale Medical School	M.D.	1983	Medicine

A. Positions and Honors:

Internship and Residencies

1983-1984 Intern in Internal Medicine, Boston City Hospital, Boston, MA
1984-1986 Resident in Internal Medicine, Boston City Hospital

Research and Clinical Positions

1986-1988 Research Fellow, Department of Pathology, Boston University School of Medicine, Boston, MA
1988-1991 Clinical Fellow in Oncology, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA
1991-1993 Research Fellow, Laboratory of Immunobiology, Dana-Farber Cancer Institute, Boston, MA
1993-1995 Instructor, Department of Medicine, Harvard Medical School, Boston, MA
1996- Assistant Professor, Depts. Of Medicine and Pathology, Boston University School of Medicine, Boston, MA
2002- Associate Professor, Depts. Of Medicine and Pathology, Boston University School of Medicine, Boston, MA
2000- Member, Immunology Training Program, Boston University School of Medicine, Boston, MA
2000- Member and Instructor, Graduate Program in Molecular Medicine, Boston Medical Center
2001- Chairman, Human Gene Therapy Committee, Boston University School of Medicine
2006- Principal Investigator, NHLBI Hematology Training Grant, BU School of Medicine, Boston, MA

Awards, Honors and Support:

1979 Phi Beta Kappa, magna cum laude (Amherst College)
1992-1995 Leukemia Society of America Special Fellowship
1997-1999 Leukemia Society of America Translational Research Award
1997-1998 American Cancer Society, Massachusetts Division, Research Award
1998-2001 American Society of Clinical Oncology Career Development Award
2000-2004 NCI RO1 Award: CA79838
2001-2004 DOD Breast Cancer Idea Award
2005-2010 NCI RO1 Awards: CA106705 and CA114094

Membership in Professional Societies and Professional Activities:

1995- American Society of Clinical Oncology (ABIM Recertified in Oncology 2004), 1997- American Society of Hematology, 2002- American Association of Immunologists, American Association for Cancer Research.
2005- *ad hoc* NIH reviewer: ZRG1 IMM-B (Cell and Molecular Immunology)
2005, 2006- *ad hoc* NIH reviewer: ZRG1-ONC-Q (Basic Mechanisms of Cancer Therapeutics)

B. Selected publications (in chronological order):

1. **Lerner A**, Jacobson B, Miller R. Cyclic AMP concentrations modulate both calcium flux and hydrolysis of phosphatidylinositol phosphates in mouse T lymphocytes. J Immun.1988; 140:936-940.
2. **Lerner A,** Philosophe B, Miller R. Defective calcium influx and preserved inositol phosphate generation in T cells in old mice. Aging: Immunol & Infectious Disease 1988; 1:149-157.
3. **Lerner A,** Yamada A, Miller R. PGP-1 T lymphocytes accumulate with age in mice and respond poorly to concanavalin A. Eur J Immunol. 1989; 19:977-982.
4. **Lerner A,** Gonin R, Steele GD, Mayer RJ. Etoposide, doxorubicin, and cisplatin chemotherapy for advanced gastric adenocarcinoma: results of a phase II trail. J. Clin. Oncol. 1992; 10:536-540.

5. **Lerner A,** Diener AC, Reinherz EL, Clayton LK. Human genomic sequences corresponding to murine CD3η-related transcripts: lack of expression of homologous human products. Eur J Immunol. 1992; 22:2135-2140.
6. **Lerner A,** D'Adamio L, Diener AC, Clayton LK and Reinherz EL. The CD3ζ/η/θ locus is colinear with and transcribed antisense to the gene encoding the transcription factor Oct-1. J Immunol. 1993; 151:3152-3162.
7. Clayton LK, Diener AC, **Lerner A,** Tse A, Koyasu S and Reinherz EL. Differential regulation of T-cell receptor processing and surface expression affected by CD3η, an alternatively spliced product of the CD3ζ/η/θ gene locus. J.Biol.Chem. 1992; 267:26023-26030.
8. Clayton LK, **Lerner A,** Diener AC, Hussey RE, Koyasu S, and Reinherz EL. T cell receptor isoforms. Int. J. Cancer 1992; Supplement 7:1-5.
9. Reinherz EL, **Lerner A,** Diener AC, Hussey R, Koyasu S and Clayton LK. T cell receptor isoforms during thymic differentiation. Mol. Basis of Immune Resp., H. Nariuchi ed. Academic Press, 1993.
10. Koyasu S, Hussey RE, Clayton LK, **Lerner A,** Pederson R, Delaney-Heiken P, Chau F and Reinherz EL. Targeted disruption within the CD3ζ/η/θ locus in mouse. EMBO J. 1994; 13:784-797.
11. **Lerner A,** Clayton LC, Mizoguchi E, Ghendler Y, Koyasu S, Bhan AK and Reinherz EL. Cross-linking of T cell receptors on double positive thymocytes induces a cytokine-mediated stromal activation process linked to cell death. EMBO J. 1996; 15:5876-5887.
12. Koyasu S, Clayton LC, **Lerner A,** Heiken H, Parkes A, Reinherz EL. Pre-TCR signaling components trigger transcriptional activation of a rearranged TCRα gene locus and silencing of the pre-TCRα locus: implications for intrathymic differentiation. Int. Immunol. 1997; 9:1475-1480.
13. Kim, D.H. and **Lerner A.** Type 4 cAMP phosphodiesterase as a therapeutic target in chronic lymphocytic leukemia. Blood 1998; Vol 92, No.7: 2484-2494.
14. Cai D, Clayton LK, Smolyar A and **Lerner A.** AND-34, a novel $p130^{Cas}$-binding thymic stromal cell protein induced by inflammatory cytokines. J. Immunol. 1999; 163: 2104-2112.
15. **Lerner A,** Elias A. Bone and soft tissue sarcomas. Current Practice in Medicine, Vol. XII: 9.1-9.7. Churchill Livingstone Inc., New York, N.Y. 1996 (1st edition) and 1999 (2nd edition).
16. Gotoh T, Cai D, Feig L and **Lerner A.** $P130^{Cas}$ regulates the activity of AND-34, a novel Ral, Rap1 and R-Ras guanine nucleotide exchange factor. J. Biol. Chem. 2000; 275: 30118-30123.
17. Lee R, Kim DH and **Lerner A.** The cAMP signaling pathway as a therapeutic target in lymphoid malignancies. Leukemia and Lymphoma. 2000, Vol 37 (1-2): 39-51.
18. Akpek G, Lenz G, Lee SM, Sancharawala V, Wright DG, Colarusso T, Waraska K, **Lerner A,** Vosburgh E, Skinner M and Comenzo RL. Immunologic recovery after autologous blood stem cell transplantation in patients with AL-amyloidosis. Bone Marrow Transplantation 2001; 28: 1105-1109.
19. Lee R, Wolda S, Moon E, Esselstyn J, Hertel C and **Lerner A.** PDE7A is expressed in human B lymphocytes and is up-regulated by elevation of intracellular cAMP. Cellular Signalling, 2002: 227-287.
20. Moon E, Lee R, Near R, Weintraub L, Wolda S, and **Lerner A.** Inhibition of PDE3B variably augments PDE4 inhibitor-induced apoptosis in chronic lymphocytic leukemia. Clin. Cancer Research 2002, 8:589-595.
21. Moon E and **Lerner A.** Benzylamide sulindac analogues induce changes in cell shape, loss of microtubules and G2/M arrest in a CLL cell line and apoptosis in primary CLL cells. Cancer Research 2002, 62:5711-5719
22. Cai D, Felekkis K,Near R,Iyer A,O'Neill G,Seventer J,Golemis E ,**Lerner A.** The GDP exchange factor AND-34 is expressed in B cells, associates with HEF1, and activates Cdc42. J. Immunol. 2003, 170:969-978.
23. Cai D, Iyer A, Near RI, Felekkis KN, Luo Z, Albanese C, Pestell RG and **Lerner A.** AND-34/BCAR3, a GDP exchange factor whose over-expression confers antiestrogen resistance, activates Rac1, Pak1 and the cyclin D1 promoter. Cancer Research 2003, 63:6802-6808.
24. Moon E and **Lerner A.** PDE4 inhibitors activate a mitochondrial apoptotic pathway in chronic lymphocytic leukemia that is regulated by PP2A. Blood 2003;101:4122-4130.
25. Tiwari S, Felekkis K, Moon E-Y, Flies A, Sherr D, **Lerner A.** Among circulating hematopoietic cells, B-CLL uniquely expresses functional EPAC1 but EPAC1-Mediated Rap1 activation does not account for PDE4 inhibitor-induced apoptosis. Blood 2004; 103:2661-2667.
26. Koido S, Ohana M, Liu C, Nikrui N, Durfee J, **Lerner A** and Gong J. Dendritic cells fused with human cancer cells: Morphology, antigen expression and T cell stimulation. Clin. Immunol. 2004: 113;261-269.
27. **Lerner A** and Andrea N. Vinca alkaloids vs. taxanes as therapy in lymphoid malignancies: Do our experimental models obscure our knowledge of how these drugs really work? Cancer Invest. 2005;23:100-102.
28. Tiwari S, Dong H, Kim EJ, Weintraub L, Epstein PM and **Lerner A.** PDE4 inhibitors augment glucocorticoid-mediated apoptosis and signaling in B-CLL in the absence of exogenous adenylate cyclase stimulation. Biochem. Pharmacol. 2005: 69; 473-483.

29. Felekkis KN, Narsimhan RP, Castro AF, Quilliam LA and **Lerner A.** AND-34 activates phosphatidylinositol 3-kinase and induces antiestrogen resistance in a SH2 and GEF-like domain-dependent manner. Molecular Cancer Research. 2005: 3; 32-41.
30. Koido S, Nikrui N, Ohana M, Xia J, Tanaka Y, Liu C, Durfee J, **Lerner A** and Gong J. Assessment of fusion cells from patient-derived ovarian carcinoma cells and dendritic cells as a vaccine for clinical use. Gynecol. Oncol. 2005: 99; 462-471.
31. **Lerner A** and Epstein P. Cyclic nucleotide phosphodiesterases as targets for treatment of haematological malignancies. Biochemical Journal. 2006: 393; 21-41.
32. **Lerner A** and Felekkis KN. Analysis of AND-34-induced Rac and Cdc42 activation in lymphoid and epithelial cells. Methods in Enzymology, 2006: 407: 55-63.
33. **Lerner A,** Moon E and Tiwari S. Role of Phosphodiesterases in apoptosis. Cyclic Nucleotide Phosphodiesterases in Health and Disease, J Beavo, S Francis and M Houslay, ed. CRC Press, 2006. Pages 559-582.
34. Everett P, Meyers JA, Makkinje A, Rabbi M and **Lerner A.** Curcumin augments vinca alkaloid and PDE4 inhibitor-induced apoptosis in B-CLL cells at clinically tolerable concentrations. Amer. J. Hematol. 2007: 82: 23-30.
35. Taverna JA, **Lerner A**, Goldberg L, Werth S, Demierre MF. Infliximab as therapy for idiopathic hypereosinophilic syndrome. Arch. Dermatol. 2007: 143: 1110-1112.
36. Near RI, Zhang Y, Makkinje A, Vanden Borre P, and **Lerner A.** AND-34/BCAR3 differs from other NSP homologs in induction of anti-estrogen resistance, cyclin D1 promoter activation and altered breast cancer cell morphology. J. Cell. Physiol. 2007: 212: 655-665.
37. Taverna JA, **Lerner A**, Bhawan J, Demierre MF. Successful adjuvant treatment of recalcitrant mucous membrane pemphigoid with anti-CD20 antibody Rituximab. J.Drugs Dermatol. 2007: 6: 731-2.
38. Meyers JA, Taverna J, Chaves J, Makkinje A and **Lerner A.** PDE4 inhibitors augment levels of glucocorticoid receptor in B cell chronic lymphocytic leukemia but not in normal circulating hematopoietic cells. Clinical Cancer Research 2007: 13: 4920-4927.
39. Mineva ND, Rothstein TL, Meyers J, **Lerner A**, and Sonenshein GE. CD40 ligand mediated activation of the de novo RelB NF-kB synthesis pathway in transformed B cells promotes rescue from apoptosis. J. Biol. Chem. 2007: 282:17475-17485.
40. **Lerner A**, Soto J and Rosen J. Chemotherapy as treatment for colocolonic intussusception associated with acquired immunodeficiency-related lymphoma. Submitted.
41. Dong, H, Carlton M, **Lerner A** and Epstein PM. Effect of cAMP signaling on expression of glucocorticoid receptor, Bim and Bad in glucocorticoid-sensitive and resistant multiple myeloma cells. In preparation.
42. Sinha A, Faller DV, **Lerner A** and Denis GV. Aggressive B1-like lymphomas of Eμ-*BRD2* transgenic mice lack immunoglobulin gene diversity. In preparation.

Support

RO1 CA106705 (Lerner) 07/01/05 – 06/30/10 40%
NIH/NCI
cAMP-mediated apoptosis in lymphoid malignancies
The major goals of this project are to elucidate the mechanisms by which PDE4 inhibitors induce apoptosis in B-CLL cells and to contrast the effects of EPAC and PKA signaling in B-CLL.

RO1 CA114094-01 (Lerner) 07/01/05-06/30/09 20%
NIH/NCI
Analysis of AND-34 in human breast cancer
The major goal of this project is to test the mechanism by which over-expression of AND-34 induces PI3K and Rac activation and anti-estrogen resistance in breast cancer cell lines.

T32 HL007501-25 (Lerner) 07/01/03-06/30/08 15%
Research Training in Blood Diseases and Resources
This NHLBI-supported Hematology Training Program supports four pre-doctoral and four post-doctoral students/year.

No grant number (Lerner) 1/1/06 –12/31/08 5%

Logica Foundation
Comparative studies of NSP family members
The major goal of this project is to contrast the role of three NSP family members (NSP-1, AND-34/BCAR3, and NSP-3/CHAT/SHEP1) in hematopoietic tissues, breast tumors and during development.